

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSSPTA1623PAZ

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

\* \* \* \* \* Welcome to STN International \* \* \* \* \*

NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	FEB 25	CA/CAPLUS - Russian Agency for Patents and Trademarks (ROSPATENT) added to list of core patent offices covered
NEWS	4	FEB 28	PATDPAFULL - New display fields provide for legal status data from INPADOC
NEWS	5	FEB 28	BABS - Current-awareness alerts (SDIs) available
NEWS	6	FEB 28	MEDLINE/LMEDLINE reloaded
NEWS	7	MAR 02	GBFULL: New full-text patent database on STN
NEWS	8	MAR 03	REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS	9	MAR 03	MEDLINE file segment of TOXCENTER reloaded
NEWS	10	MAR 22	KOREAPAT now updated monthly; patent information enhanced
NEWS	11	MAR 22	Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS	12	MAR 22	PATDPASPC - New patent database available
NEWS	13	MAR 22	REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS	14	APR 04	EPFULL enhanced with additional patent information and new fields
NEWS	15	APR 04	EMBASE - Database reloaded and enhanced
NEWS	16	APR 18	New CAS Information Use Policies available online
NEWS	17	APR 25	Patent searching, including current-awareness alerts (SDIs), based on application date in CA/CAPLUS and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.
NEWS EXPRESS			JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005
NEWS HOURS			STN Operating Hours Plus Help Desk Availability
NEWS INTER			General Internet Information
NEWS LOGIN			Welcome Banner and News Items
NEWS PHONE			Direct Dial and Telecommunication Network Access to STN
NEWS WWW			CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 09:48:14 ON 27 APR 2005

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 09:48:23 ON 27 APR 2005  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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Property values tagged with IC are from the ZIC/VINITI data file  
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STRUCTURE FILE UPDATES: 26 APR 2005 HIGHEST RN 849322-79-8  
DICTIONARY FILE UPDATES: 26 APR 2005 HIGHEST RN 849322-79-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

\*\*\*\*\*  
\*  
\* The CA roles and document type information have been removed from \*  
\* the IDE default display format and the ED field has been added, \*  
\* effective March 20, 2005. A new display format, IDERL, is now \*  
\* available and contains the CA role and document type information. \*  
\*  
\*\*\*\*\*

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> logoff hold  
COST IN U.S. DOLLARS

	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.43	0.64

SESSION WILL BE HELD FOR 60 MINUTES  
STN INTERNATIONAL SESSION SUSPENDED AT 09:48:28 ON 27 APR 2005

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSSPTA1623PAZ

PASSWORD:  
TERMINAL (ENTER 1, 2, 3, OR ?):2

\* \* \* \* \* Welcome to STN International \* \* \* \* \*

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NEWS	3 FEB 25	CA/CAPLUS - Russian Agency for Patents and Trademarks (ROSPATENT) added to list of core patent offices covered
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data from INPADOC

NEWS	5	FEB	28	BABS - Current-awareness alerts (SDIs) available
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NEWS	12	MAR	22	PATDPASPC - New patent database available
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NEWS	17	APR	25	Patent searching, including current-awareness alerts (SDIs), based on application date in CA/CAPLUS and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.

NEWS EXPRESS JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005

NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS INTER	General Internet Information
NEWS LOGIN	Welcome Banner and News Items
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NEWS WWW	CAS World Wide Web Site (general information)

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 13:26:02 ON 27 APR 2005

=> e reg

THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE

The EXPAND command is used to look at the index in a file which has an index. This file does not have an index.

=> file reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 13:26:15 ON 27 APR 2005

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STRUCTURE FILE UPDATES: 26 APR 2005 HIGHEST RN 849322-79-8  
 DICTIONARY FILE UPDATES: 26 APR 2005 HIGHEST RN 849322-79-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

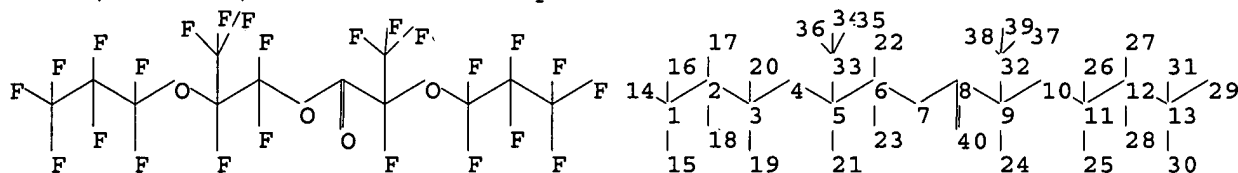
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*****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005. A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*
*****
```

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=>

Uploading C:\Documents and Settings\PZucker\My Documents\Examination Auxillary  
files\10619784\10619784 elected specie.str



chain nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

chain bonds :

1-2 1-14 1-15 1-16 2-3 2-17 2-18 3-4 3-19 3-20 4-5 5-6 5-21 5-33 6-7  
6-22 6-23 7-8 8-9 8-40 9-10 9-24 9-32 10-11 11-12 11-25 11-26 12-13  
12-27 12-28 13-29 13-30 13-31 32-37 32-38 32-39 33-34 33-35 33-36

exact/norm bonds :

3-4 4-5 6-7 7-8 8-40 9-10 10-11

exact bonds :

1-2 1-14 1-15 1-16 2-3 2-17 2-18 3-19 3-20 5-6 5-21 5-33 6-22 6-23  
8-9 9-24 9-32 11-12 11-25 11-26 12-13 12-27 12-28 13-29 13-30 13-31  
32-37 32-38 32-39 33-34 33-35 33-36

Match level :

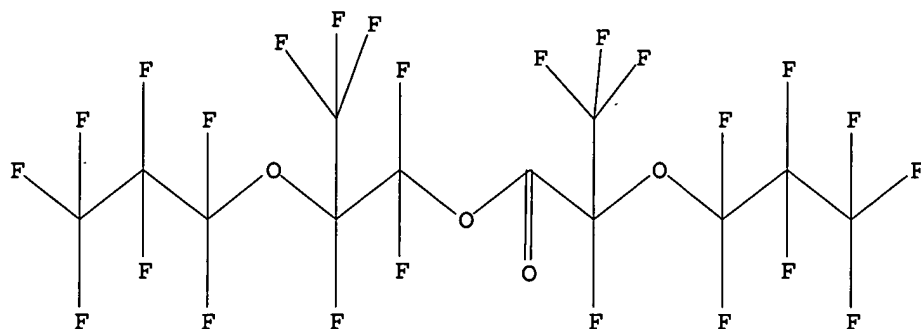
1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:CLASS  
10:CLASS 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS  
18:CLASS 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS  
26:CLASS 27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS 33:CLASS  
34:CLASS 35:CLASS 36:CLASS 37:CLASS 38:CLASS 39:CLASS 40:CLASS

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> search l1 exact full

FULL SEARCH INITIATED 13:26:58 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 149 TO ITERATE

100.0% PROCESSED 149 ITERATIONS

1 ANSWERS

SEARCH TIME: 00.00.01

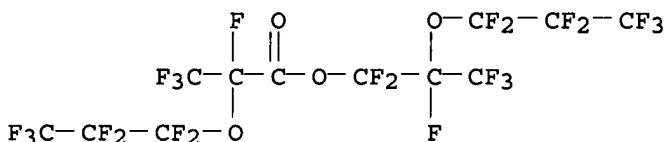
L2 1 SEA EXA FUL L1

=> d scan

L2 1 ANSWERS REGISTRY COPYRIGHT 2005 ACS on STN

IN Propanoic acid, 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)-,  
1,1,2,3,3,3-hexafluoro-2-(heptafluoropropoxy)propyl ester (9CI)

MF C12 F24 O4



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

ALL ANSWERS HAVE BEEN SCANNED

=> fikle caplus

0 FIKLE

0 CAPLUS

L3 0 FIKLE CAPLUS

(FIKLE(W)CAPLUS)

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

64.31

64.52

FILE 'CAPLUS' ENTERED AT 13:27:19 ON 27 APR 2005

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FILE COVERS 1907 - 27 Apr 2005 VOL 142 ISS 18  
FILE LAST UPDATED: 26 Apr 2005 (20050426/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> l3

L4 0 L3

=> l2

L5 12 L2

=> d l5 1-12 ti

L5 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Method for producing fluorinated compound and fluorination apparatus

L5 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Preparation of compounds while analyzing products using near-IR spectroscopy

L5 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Processes for producing fluorinated esters, fluorinated acyl fluorides, and fluorinated vinyl ethers

L5 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for producing product of decomposition of fluorinated ester compound

L5 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for preparing fluorinated esters using gas chromatography

L5 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI A new route to perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds

L5 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for producing fluorinated ester compounds

L5 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Manufacture of perfluoro compounds and derivatives

L5 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for the preparation of etheric oxygen-containing perfluoroacyl fluorides and perfluorovinyl ethers

L5 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI A new route to perfluorinated vinyl ether monomers: synthesis of perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds

L5 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Synthesis of versatile poly- and perfluorinated compounds by utilizing

direct fluorination, a new route to perfluoro(propyl vinyl ether) monomer: synthesis of perfluoro(2-propoxypropionyl) fluoride from non-fluorinated compounds

L5 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for producing fluorine compound through liquid-phase fluorination

=> d l5 1-12 ti fbib abs

L5 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Method for producing fluorinated compound and fluorination apparatus

AN 2004:354898 CAPLUS

DN 140:356951

TI Method for producing fluorinated compound and fluorination apparatus

IN Suzuki, Yasuhiro; Watanabe, Kunio; Yanase, Koichi

PA Asahi Glass Company, Limited, Japan

SO PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004035518	A1	20040429	WO 2003-JP13312	20031017
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG		JP 2002-304638	A 20021018

OS CASREACT 140:356951

AB Disclosed is a method for producing a fluorinated compound wherein a section for introducing fluorine, a section for introducing a raw material compound to be fluorinated, a fluorination region and a section for discharging a fluorinated compound are connected with a circulating circuit in which an inert liquid is flowing in one direction, and fluorination is effected by introducing the raw material compound and fluorine into an inert liquid in said circuit, characterized in that fluorine is introduced into the flow of an inert liquid containing substantially no raw material compound. The method

allows the continuous production of a fluorinated compound with improved efficiency, with the suppression of an undesired side reaction. Thus, a mixture of F(g) (78 g/h) and N (57 g/h) and CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>OCF(CF<sub>3</sub>)CO<sub>2</sub>CH<sub>2</sub>CH(CH<sub>3</sub>)OC H<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub> (I) (52 g/h) were continuously fed into a inert liquid of CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>OCF(CF<sub>3</sub>)CF<sub>2</sub>OCF(CF<sub>3</sub>)COF (4 kg) circulating through a stainless steel tube at 20° for 300 h in an apparatus described above to give a reaction mixture containing 95.2 mol% CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>OCF(CF<sub>3</sub>)CO<sub>2</sub>CF<sub>2</sub>(CF<sub>3</sub>)OCF<sub>2</sub>CF<sub>2</sub>CF<sub>3</sub> (product), 3.0 mol% partially fluorinated I, and 1.8% mol% fluorinated byproducts derived from cleavage of carbon bonds.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Preparation of compounds while analyzing products using near-IR spectroscopy

AN 2002:802409 CAPLUS

DN 137:325157

TI Preparation of compounds while analyzing products using near-IR spectroscopy

IN Yamamoto, Kiyoshi; Kakita, Reiko; Okamoto, Shuichi  
 PA Japan Carlit Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002308827	A2	20021023	JP 2001-108764 JP 2001-108764	20010406 20010406

AB Compds. are prepared by chemical conversion of H atom of compds. showing H-X (X = arbitrary atom) vibrational absorption in near-IR region while monitoring amount of H atom by near-IR absorption. Preparation of perfluoro[1,2-bis(2-ethylhexyloxycarbonyl)]hexane by fluorination of bis(2-ethylhexyl) phthalate was carried out while monitoring the reactant conversion by near-IR spectrum.

L5 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Processes for producing fluorinated esters, fluorinated acyl fluorides, and fluorinated vinyl ethers

AN 2002:539635 CAPLUS

DN 137:94172

TI Processes for producing fluorinated esters, fluorinated acyl fluorides, and fluorinated vinyl ethers

IN Okazoe, Takashi; Watanabe, Kunio; Tatematsu, Shin; Murofushi, Hidenobu; Sato, Masakuni; Ito, Masahiro; Yanase, Koichi; Suzuki, Yasuhiro

PA Asahi Glass Company, Limited, Japan

SO PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002055471	A1	20020718	WO 2002-JP236	20020116
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
				JP 2001-8252	A 20010116
EP	1352892	A1	20031015	EP 2002-715755	20020116
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
				JP 2001-8252	A 20010116
				WO 2002-JP236	W 20020116
ZA	2003005170	A	20040709	ZA 2003-5170	20020116
				JP 2001-8252	A 20010116

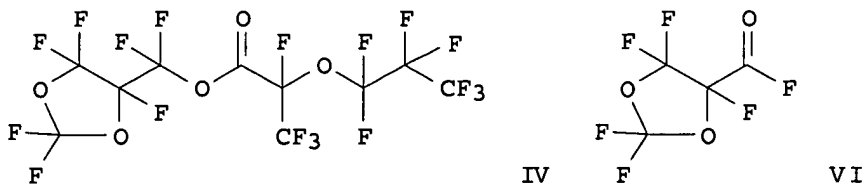
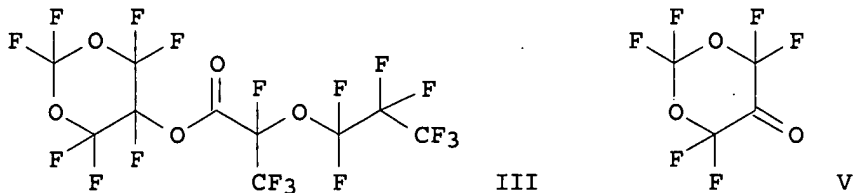
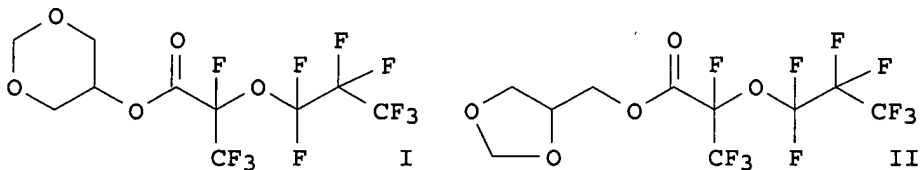
OS MARPAT 137:94172

AB Fluorinated esters are prepared in shorter steps including a transesterification step in which RACH<sub>2</sub>OH (RA = monovalent organic group) and RAFCOOCF<sub>2</sub>RAF [RAF = (fluorinated) RA] are subjected to transesterification to obtain RAFCOOCH<sub>2</sub>RA, and a fluorination step in which the compound obtained is fluorinated in a liquid phase to obtain a reaction product containing RAFCOOCF<sub>2</sub>RAF. Fluorinated acyl fluorides and perfluorovinyl ethers (e.g., CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>OOCF<sub>2</sub>CF<sub>2</sub>) can be prepared in large scale with low cost from fluorinated esters.

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Process for producing product of decomposition of fluorinated ester compound  
 AN 2002:465955 CAPLUS  
 DN 137:47203  
 TI Process for producing product of decomposition of fluorinated ester compound  
 IN Watanabe, Kunio; Suzuki, Yasuhiro; Yanase, Koichi; Okazoe, Takashi  
 PA Asahi Glass Company, Limited, Japan  
 SO PCT Int. Appl., 33 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002048085	A1	20020620	WO 2001-JP10889	20011212
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002021128	A5	20020624	JP 2000-379101	A 20001213
				AU 2002-21128	20011212
				JP 2000-379101	A 20001213
				WO 2001-JP10889	W 20011212
OS	CASREACT 137:47203; MARPAT 137:47203				
GI					



AB Disclosed is a process for production of fluorinated ketones of formula

RAFRBFCO (RAF = F, monovalent organic group; RBF = monovalent organic group) and/or fluorinated acyl fluoride of formula RCFCOF (RCF = monovalent organic group) with high productivity which comprises efficiently decomposing a fluorinated ester compound of formula RCFCO<sub>2</sub>CFRAFRBF (RAF, RBF, RCF = same as above) at a low temperature and a high reaction rate. In this process, a fluorinated ester compound having a decomposable ester bond is decomposed at the ester bond to obtain a decomposition product. The ester bond decomposition reaction is conducted in the presence of KF at a temperature of 200° or lower substantially without using a solvent. The reaction is conducted while continuously supplying the fluorinated ester compound to the reaction zone and continuously discharging the decomposition products from the reaction zone. Thus, a 59:41 mixture of 5-hydroxy-1,3-dioxane and 1,3-dioxolane-4-methanol (100 g) and 10.7 g Et<sub>3</sub>N were charged into a flask, and stirred at ≤10°, followed by adding dropwise 351.0 g FCOCF(CF<sub>3</sub>)OCF<sub>2</sub>CF<sub>2</sub>CF<sub>3</sub> at ≤10° over a period of 400 min, and the resulting mixture was stirred at room temperature for 1 h and

treated

with 500 mL H<sub>2</sub>O at ≤15° and then with 1,000 mL dichloropentafluoropropane (AK225). The bottom layer was separated, washed twice with 500 mL H<sub>2</sub>O, dried over MgSO<sub>4</sub>, filtered, concentrated by an evaporator, and vacuum-distilled at 59-62° and 0.4 kPa to give a mixture of esters (I and II) (328.0 g). Diluted F (20 volume % in N) was blown at 17.04 L/h and 25° into 1,701 g R-113 for 1 h in an autoclave connected at the gas outlet to a condenser (kept at 20°), a NaF pellet-packed layer, and a condenser (kept at -10°) in series, followed by injecting a solution of a mixture of I and II esters (115 g) in 863 g R-113 over a period of 24.8 h while blowing diluted F into the reaction solution. A solution of benzene in R-113 (0.04 g/mL, 30 mL) was injected into the reaction mixture at 0.15 MPa and 25-40° while blowing diluted F into the reaction solution and then stirred for 0.3 h. A solution of benzene

in

R-113 (20 mL) was again injected into the reaction mixture at 0.15 MPa and 40° while blowing diluted F into the reaction solution and then stirred for 0.3 h. After repeating the same procedure one more time upon which a total of 3.14 g benzene and 70 mL R-113 was added, the reaction mixture was stirred for 1.0 h to give a crude reaction liquid containing perfluorinated esters (III) (68% yield) and (IV) (93% yield). The crude reaction liquid (135.1 g) and 2.98 g KF were charged into a reactor and vigorously stirred at 91° for 5 h. A liquid sample (118.8 g) was collected at the outlet of the reflux condenser, which contained CF<sub>3</sub>CF(OCF<sub>2</sub>CF<sub>2</sub>CF<sub>3</sub>)COF as the main product and perfluoro-1,3-dioxan-5-one (V) (83% yield) and perfluoro-1,3-dioxolane-4-carbonyl fluoride (VI) (62% yield).

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Process for preparing fluorinated esters using gas chromatography  
AN 2002:391677 CAPLUS  
DN 136:401447  
TI Process for preparing fluorinated esters using gas chromatography  
IN Kawahara, Kengo; Isemura, Tsuguhide; Okazoe, Takashi  
PA Asahi Glass Company, Limited, Japan  
SO PCT Int. Appl., 19 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002040437	A1	20020523	WO 2001-JP10116	20011120
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,				

VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

			JP 2000-353340	A	20001120
JP 2002155031	A2	20020528	JP 2000-353340		20001120
CA 2429074	AA	20020523	CA 2001-2429074		20011120
			JP 2000-353340	A	20001120
			WO 2001-JP10116	W	20011120
AU 2002014326	A5	20020527	AU 2002-14326		20011120
			JP 2000-353340	A	20001120
			WO 2001-JP10116	W	20011120
EP 1336601	A1	20030820	EP 2001-982860		20011120
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			JP 2000-353340	A	20001120
			WO 2001-JP10116	W	20011120
ZA 2003003344	A	20040430	ZA 2003-3344		20011120
			JP 2000-353340	A	20001120
US 2003203501	A1	20031030	US 2003-438943		20030516
			JP 2000-353340	A	20001120
			WO 2001-JP10116	A1	20011120

OS CASREACT 136:401447

AB A process for determining accurately the amount of a fluorinated ester in the preparation thereof or determining accurately the consumption of a fluorinated ester

and the amount of a formed substance in the chemical transformation of the ester allows the progress of the degree of fluorination and thermal decomposition to be monitored and enables efficient preparation of the objective

substance in a yield equal to or higher than an objective level. That is, a process for preparing a fluorinated ester from starting compds. by a chemical reaction is characterized in that the reaction is continued until the yield of the ester reaches a predetd. level as determined by gas chromatog. with a nonpolar column. This process is also useful for quality control in a manufacturing process using fluorinated ester. Thus, NaF was added to 1,1,2-trichlorotrifluoroethane (R-113) in an autoclave and cooled to -10°, to which N was blown into the mixture for 1 h and then 20% F in N for 1 h, followed by injecting a solution of MeCH<sub>2</sub>CH<sub>2</sub>OCHMeCH<sub>2</sub>O<sub>2</sub>CCF(CF<sub>3</sub>)O(CF<sub>2</sub>)<sub>3</sub>F in R-113 over 19.4 h. A solution of benzene in R-113 was injected to the reaction mixture while blowing 25%F/N into the mixture and the outlet valve of the autoclave was closed and then the inlet valve of the autoclave was closed when the pressure reached at 0.12 MPa, followed by stirring the resulting mixture for 1 h. The above procedure (benzene treatment) was repeated four times while the temperature rose from -10° to room temperature and five times at room temperature, followed by blowing N

into the resulting mixture for 1 h. A anal. sample was taken by decantation and analyzed by GC at 270° using a nonpolar capillary column (J & W Inc., DB-1, 60 m length, inner diameter 0.25 mm, membrane thickness 1.0 µm) (main column) and an inactivated fused silica hollow capillary column (GL Science Inc., length 1 m, inner diameter 0.530 mm, and outer diameter

0.660 mm) (precolumn) which were connected by a capillary column connector. A hydrogen flame ionization detector was used at 280° and the structure of each peak was determined by mass spectrometer. The anal. confirmed that two peaks corresponding to perfluorinated ester, i.e. CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>O(CF<sub>3</sub>)CF<sub>2</sub>O<sub>2</sub>CCF(CF<sub>3</sub>)OCF<sub>2</sub>CF<sub>2</sub>CF<sub>3</sub>, and perfluoroacyl fluoride, i.e. CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>O(CF<sub>3</sub>)COF, were formed in 95 and 0.6%, resp., and completely separated in the gas chromatogram. The perfluorinated ester was analyzed substantially without decomposition

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI A new route to perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds  
 AN 2002:285166 CAPLUS  
 DN 137:294705  
 TI A new route to perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds  
 AU Okazoe, Takashi; Watanabe, Kunio; Itoh, Masahiro; Shirakawa, Daisuke; Murofushi, Hidenobu; Okamoto, Hidekazu; Kawahara, Kengo; Tatematsu, Shin  
 CS Res. Cent., Asahi Glass Co., Ltd., Yokohama, 221-8755, Japan  
 SO Asahi Garasu Kenkyu Hokoku (2001), 51, 33-37  
 CODEN: AGKHAD; ISSN: 0004-4210  
 PB Asahi Garasu K.K. Chuo Kenkyusho  
 DT Journal  
 LA Japanese  
 OS CASREACT 137:294705  
 AB A new synthetic procedure for the preparation of perfluoro(alkoxyalkanoyl) fluorides, which are precursors to perfluorinated vinyl ether monomers, from non-fluorinated alkoxyalcs. has been developed. The new procedure involves esterification of non-fluorinated alkoxyalcs. with perfluoro(alkoxyalkanoyl) fluorides, direct fluorination of the resulting esters, i.e. alkoxyalcs. perfluoro(alkoxyalkanoyl) esters, by fluorine gas, and thermal decomposition of perfluorinated esters into perfluoro(alkoxyalkanoyl) fluorides in the presence of NaF as the catalyst. Available perfluoro (alkoxyalkanoyl) fluorides such as perfluoro(2-propoxypropionyl) fluoride, so called hexafluoropropylene oxide (HFPO) dimer, can be multiplied by the use of the hydrocarbon counterpart alcs. and fluorine gas as raw materials. In the case that the desired perfluoro (alkoxyalkanoyl) fluoride is not readily available, it can be obtained from its hydrocarbon counterpart alc. and an available perfluoroacyl fluoride. Thus, 1-propoxy-1-propanol was esterified with perfluoro(2-propoxypropionyl) fluoride (I) at 25-35° to give 99.2% 2-propoxy-Pr perfluoro(2-propoxypropionate) which was fluorinated by 20% F(g) in N in 1,1,2-trichlorotrifluoroethane at room temperature for 63.7 h followed by injecting a solution of benzene in 1,1,2-trichlorotrifluoroethane after closing the F(g) inlet valve, and the resulting mixture was allowed to react at 40° to give 93.2% perfluoro(2-propoxypropyl 2-propoxypropionate) (II). A suspension of NaF in II was heated at 140° for 15 in an oil bath with vigorous stirring to give 94.2% I.

L5 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Process for producing fluorinated ester compounds  
 AN 2002:256214 CAPLUS  
 DN 136:294541  
 TI Process for producing fluorinated ester compounds  
 IN Okazoe, Takashi; Watanabe, Kunio; Tatematsu, Shin; Yanase, Koichi; Suzuki, Yasuhiro; Shirakawa, Daisuke  
 PA Asahi Glass Co., Ltd., Japan  
 SO PCT Int. Appl., 52 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002026688	A1	20020404	WO 2001-JP8433	20010927
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
				JP 2000-295141	A 20000927

AU 2001092268	A5	20020408	AU 2001-92268	20010927
			JP 2000-295141	A 20000927
			WO 2001-JP8433	W 20010927
CA 2423910	AA	20030326	CA 2001-2423910	20010927
			JP 2000-295141	A 20000927
			WO 2001-JP8433	W 20010927
EP 1323703	A1	20030702	EP 2001-972529	20010927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
			JP 2000-295141	A 20000927
			WO 2001-JP8433	W 20010927
ZA 2003002352	A	20040326	ZA 2003-2352	20010927
			JP 2000-295141	A 20000927
US 2003216595	A1	20031120	US 2003-397521	20030327
			JP 2000-295141	A 20000927
			WO 2001-JP8433	A1 20010927

OS CASREACT 136:294541; MARPAT 136:294541

AB This document discloses a process for producing an industrially useful fluorinated ester compound and a fluorine compound such as an acid fluoride compound. The title compds. are intermediates for monomers. The process for producing a fluorinated ester compound comprises fluorinating in a liquid phase a compound which is an ester of a hydroxyl compound with a compound having an acyl fluoride group and which has a structure capable of being fluorinated, and said process is characterized in that the ester compound being fluorinated is in the form of a liquid mixture with the compound having an acyl fluoride group.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Manufacture of perfluoro compounds and derivatives  
AN 2002:256213 CAPLUS  
DN 136:294528  
TI Manufacture of perfluoro compounds and derivatives  
IN Watanabe, Kunio; Okazoe, Takashi; Tatematsu, Shin; Shirakawa, Daisuke  
PA Asahi Glass Co., Ltd., Japan  
SO PCT Int. Appl., 42 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002026687	A1	20020404	WO 2001-JP8367	20010926
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
				JP 2000-295134	A 20000927
	AU 2001090271	A5	20020408	AU 2001-90271	20010926
				JP 2000-295134	A 20000927
				WO 2001-JP8367	W 20010926

OS CASREACT 136:294528; MARPAT 136:294528

AB Perfluoro compds. and perfluoro acid fluorides are efficiently prepared. Compds. of the general formula  $\text{RAFOCF}(\text{CF}_3)\text{CF}_2\text{OCOCF}(\text{CF}_3)\text{ORBF}$  are prepared by fluorinating a hydrogen-containing fluorinated compound, e.g.,  $\text{RAHOCH}(\text{CH}_3)\text{CH}_2\text{OCOCF}(\text{CF}_3)\text{ORBH}$  in a liquid phase in the presence of a product of partial fluorination of the hydrogen-containing fluorinated compound, e.g.,

RAFOCH(CF<sub>3</sub>)CF<sub>2</sub>OCOCF(CF<sub>3</sub>)ORBF or RAFOCF(CF<sub>3</sub>)CHFOCOCF(CF<sub>3</sub>)ORBF (RAH, RBH = monovalent organic group; RAF, RBF = monovalent perfluorinated organic group). Further, the compds. thus prepared can be converted into perfluoro acid fluorides via ester linkage cleavage, and the perfluoro acid fluorides can be further converted into perfluoro vinyl ethers via pyrolysis.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Process for the preparation of etheric oxygen-containing perfluoroacyl fluorides and perfluorovinyl ethers  
AN 2002:107288 CAPLUS  
DN 136:151577  
TI Process for the preparation of etheric oxygen-containing perfluoroacyl fluorides and perfluorovinyl ethers  
IN Okazoe, Takashi; Murofushi, Hidenobu; Watanabe, Kunio; Tatematsu, Shin  
PA Asahi Glass Company, Limited, Japan  
SO PCT Int. Appl., 42 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002010107	A1	20020207	WO 2001-JP6597	20010731
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
			JP 2000-231157	A 20000731

OS MARPAT 136:151577

AB The invention relates to a process for the preparation of industrially useful fluorine compds. such as acyl fluorides, i.e., a process which comprises reacting a compound of the following general formula: RAHOCH(CH<sub>3</sub>)CH<sub>2</sub>OCOCF(CF<sub>3</sub>)ORBF having a fluorine content of 30% by mass or above with fluorine in a liquid phase to thereby obtain a compound of the following general formula: RAFOCF(CF<sub>3</sub>)CF<sub>2</sub>OCOCF(CF<sub>3</sub>)ORBF, and subjecting this compound to ester linkage cleavage (wherein RAH is C1-20 alkyl or C1-20 alkyl containing one or more etheric oxygen atoms; RAF is a group derived from RAH by perfluorination; and RBF is C1-20 perfluoroalkyl or C1-20 perfluoroalkyl containing one or more etheric oxygen atoms). Thus, CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>OCH(CH<sub>3</sub>)CH<sub>2</sub>OH obtained from propylene oxide and 1-propanol were reacted with CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>OCF(CF<sub>3</sub>)COF to give CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>OCF(CF<sub>3</sub>)COOCH<sub>2</sub>CH(CH<sub>3</sub>)OCH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, fluorinated with F<sub>2</sub> in R 113 containing NaF to give CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>OCF(CF<sub>3</sub>)COOCF<sub>2</sub>CF(CF<sub>3</sub>)OCF<sub>2</sub>CF<sub>2</sub>CF<sub>3</sub>, thermally decomposed to give CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>OCF(CF<sub>3</sub>)COF, then give CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>OCF:CF<sub>2</sub>.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN  
TI A new route to perfluorinated vinyl ether monomers: synthesis of perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds  
AN 2001:872315 CAPLUS  
DN 136:135058  
TI A new route to perfluorinated vinyl ether monomers: synthesis of perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds  
AU Okazoe, Takashi; Watanabe, Kunio; Itoh, Masahiro; Shirakawa, Daisuke; Tatematsu, Shin  
CS Research Center, Asahi Glass Co. Ltd., Kanagawa-ku, Yokohama, 221-8755, Japan

SO Journal of Fluorine Chemistry (2001), 112(1), 109-116  
CODEN: JFLCAR; ISSN: 0022-1139  
PB Elsevier Science S.A.  
DT Journal  
LA English  
AB A new synthetic procedure for the preparation of various perfluoro(alkoxyalkanoyl) fluorides, which are precursors to perfluorinated vinyl ether monomers, from non-fluorinated alkoxy alcs. was developed. Available perfluoro(alkoxyalkanoyl) fluorides such as perfluoro(2-propoxypropionyl) fluoride, so-called HFPO dimer, can be multiplied by the use of the hydrocarbon counterpart alcs. and fluorine gas as raw materials. In the case that the desired perfluoro(alkoxyalkanoyl) fluoride is not readily available, it can be obtained from its hydrocarbon counterpart alc. and an available perfluoroacyl fluoride.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Synthesis of versatile poly- and perfluorinated compounds by utilizing direct fluorination, a new route to perfluoro(propyl vinyl ether) monomer: synthesis of perfluoro(2-propoxypropionyl) fluoride from non-fluorinated compounds  
AN 2001:186960 CAPLUS  
DN 134:367222  
TI Synthesis of versatile poly- and perfluorinated compounds by utilizing direct fluorination, a new route to perfluoro(propyl vinyl ether) monomer: synthesis of perfluoro(2-propoxypropionyl) fluoride from non-fluorinated compounds  
AU Okazoe, Takashi; Watanabe, Kunio; Itoh, Masahiro; Shirakawa, Daisuke; Murofushi, Hidenobu; Okamoto, Hidekazu; Tatematsu, Shin  
CS Research Center, Asahi Glass Co., Ltd., Yokohama, 221-8755, Japan  
SO Advanced Synthesis & Catalysis (2001), 343(2), 215-219  
CODEN: ASCAF7; ISSN: 1615-4150  
PB Wiley-VCH Verlag GmbH  
DT Journal  
LA English  
AB Perfluoro(2-propoxypropionyl) fluoride, which is the precursor of the perfluorinated Pr vinyl ether (PPVE) monomer of an industrially important perfluoroalkoxy copolymer (PFA), was synthesized by utilizing direct fluorination of the non-fluorinated counterpart for the first time. The partially-fluorinated ester synthesized from the desired perfluorinated acid fluoride itself and the non-fluorinated alc., which has a carbon skeleton corresponding to the desired compound, was perfluorinated by liquid-phase direct fluorination with elemental fluorine. Degradation of the resulting perfluorinated ester gave 2 mols. of the desired acid fluoride. In a sense, this process can be called self-multiplication of a perfluorinated acid fluoride from a non-fluorinated alc.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Process for producing fluorine compound through liquid-phase fluorination  
AN 2000:688202 CAPLUS  
DN 133:266514  
TI Process for producing fluorine compound through liquid-phase fluorination  
IN Okazoe, Takashi; Watanabe, Kunio; Tatematsu, Shin; Murofushi, Hidenobu  
PA Asahi Glass Company, Limited, Japan  
SO PCT Int. Appl., 83 pp.  
CODEN: PIXXD2

DT Patent  
LA Japanese

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2000056694	A1	20000928	WO 2000-JP1765	20000323
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
				JP 1999-78544	A 19990323
				JP 1999-246154	A 19990831
CA 2362695	AA	20000928	CA 2000-2362695		20000323
			JP 1999-78544	A	19990323
			JP 1999-246154	A	19990831
			WO 2000-JP1765	W	20000323
AU 2000033258	A5	20001009	AU 2000-33258		20000323
			JP 1999-78544	A	19990323
			JP 1999-246154	A	19990831
			WO 2000-JP1765	W	20000323
EP 1164122	A1	20011219	EP 2000-911298		20000323
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
			JP 1999-78544	A	19990323
			JP 1999-246154	A	19990831
			WO 2000-JP1765	W	20000323
RU 2243205	C2	20041227	RU 2001-128508		20000323
			JP 1999-78544	A	19990323
			JP 1999-246154	A	19990831
			WO 2000-JP1765	W	20000323
JP 2001139509	A2	20010522	JP 2000-166773		20000602
			JP 1999-246154	A	19990831
WO 2001094285	A1	20011213	WO 2001-JP1735		20010306
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			WO 2001-JP1735	W	20010306
EP 1288183	A1	20030305	EP 2001-908356		20010306
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			WO 2001-JP1735	W	20010306
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			JP 1999-78544	A	19990323
US 2002022752	A1	20020221	US 2001-960381		20010924
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			JP 1999-78544	A	19990323
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			WO 2000-JP1765	W	20000323
ZA 2002000832	A	20030130	ZA 2002-832		20020130
			JP 1999-246154	A	19990831
US 2003139570	A1	20030724	US 2002-307388		20021202
			JP 2000-166773	A	20000602
			WO 2001-JP1735	A1	20010306
US 2003204099	A1	20031030	US 2003-421924		20030424
			JP 1999-78544	A	19990323

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			WO 2000-JP1765	A1	20000323
			US 2001-960381	A1	20010924
			US 2004-915423		20040811
			JP 1999-78544	A	19990323
			JP 1999-246154	A	19990831
			WO 2000-JP1765	A1	20000323
			US 2001-960381	A1	20010924
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PATENT FAMILY INFORMATION:

FAN 2001:167952

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001016085	A1	20010308	WO 2000-JP5888	20000830
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				JP 2000-211722	A 20000712
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				JP 2000-211722	A 20000712
AU 2000068660		A5	20010326	WO 2000-JP5888	W 20000830
				AU 2000-68660	20000830
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				JP 2000-211722	A 20000712
				WO 2000-JP5888	W 20000830
EP 1208075		A1	20020529	EP 2000-956818	20000830
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WO 2001094285		A1	20011213	WO 2001-JP1735	20010306
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				JP 2000-166773	A 20000602
AU 2001036108		A5	20011217	AU 2001-36108	20010306
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				WO 2001-JP1735	W 20010306
EP 1288183		A1	20030305	EP 2001-908356	20010306

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IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

			JP 2000-166773	A	20000602
			WO 2001-JP1735	W	20010306
ZA 2002000832	A	20030130	ZA 2002-832		20020130
			JP 1999-246154	A	19990831
US 2002107358	A1	20020808	US 2002-84506		20020228
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			JP 1999-246154	A	19990831
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			WO 2000-JP5888	A1	20000830
US 2003139570	A1	20030724	US 2002-307388		20021202
			JP 2000-166773	A	20000602
			WO 2001-JP1735	A1	20010306

OS CASREACT 133:266514; MARPAT 133:266514

AB A process for producing a fluorine compound such as industrially useful perfluorinated alkanolic acid fluoride derivative, from inexpensive materials in short steps and high yields is described. The process comprises reacting a compound RA-E1, e.g., RACH<sub>2</sub>OH, with a compound RB-E2, e.g., XCORB, to form a compound RA-E-RB (I), e.g., RACH<sub>2</sub>OCORB, fluorinating the compound I in a liquid phase to form a compound RAF-EF-RBF (II), e.g., RAFCF<sub>2</sub>OCORBF, and converting the compound II into a compound RAF-EF1, e.g., RAFCOF, and/or a compound RBF-EF2, e.g., RBFCOF, [wherein RA, RB = monovalent saturated (halo)hydrocarbyl optionally containing heteroatoms, monovalent organic group which can be converted into RHF group in the liquid phase; RHF = group derived by replacing ≥1 H atom(s) of monovalent (partially halogenated) saturated hydrocarbyl optionally containing heteroatom(s) with fluorine atom(s); RAF and RBF are fluorinated RA and RB, resp.; X = halo]. Thus, 46.5 g CF<sub>3</sub>(CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>O)CFCOF was added dropwise to 16.5 g CH<sub>3</sub>(CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>O)CHCH<sub>2</sub>OH at 26-31° over a period of 2 h with bubbling N into the reaction mixture to give, after workup and vacuum distillation, CF<sub>3</sub>CF(OCF<sub>2</sub>CF<sub>2</sub>CF<sub>3</sub>)CO<sub>2</sub>CH<sub>2</sub>CH(OCH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>)CH<sub>3</sub> (III) in three fractions 29 g (68% purity), 19 g (98% purity), and 4 g (97 % purity). The last two fractions were combined, a portion of which (19.5 g) was dissolved in 250 g R-113 to give a solution of III. The latter solution was injected into a cooled (-10°) mixture of 324 g R-113 and 26.1 g NaF in an autoclave over a period of 17.4 h while bubbling F(g) at 5.66 L/h in to the reaction mixture to give CF<sub>3</sub>CF(OCF<sub>2</sub>CF<sub>2</sub>CF<sub>3</sub>)CO<sub>2</sub>CF<sub>2</sub>CF(OCF<sub>2</sub>CF<sub>2</sub>CF<sub>3</sub>)CF<sub>3</sub> in 68% based on <sup>19</sup>NMR which was purified by vacuum distillation. The latter compound (15 g) was placed in a stainless steel ampule and heated at 200° for 2 h to give CF<sub>3</sub>CF(OCF<sub>2</sub>CF<sub>2</sub>CF<sub>3</sub>)COF in 85% yield based on <sup>19</sup>NMR.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	55.24	119.76

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-8.76	-8.76

SESSION WILL BE HELD FOR 60 MINUTES

STN INTERNATIONAL SESSION SUSPENDED AT 13:44:36 ON 27 APR 2005